REMARKS

Applicants have attached a marked version of the claims in this application. For the Examiner's convenience, Applicants have also attached a clean copy of all pending claims in this application after amendments.

Respectfully submitted,

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MARKED VERSION OF CLAIMS SHOWING AMENDMENTS

1. (Amended) Process for oxidising a substrate which is an acyclic or cyclic terpene [;] , or a cycloalkene or a substituted derivative thereof, and which process comprises: oxidising said [compound] substrate with a mutant haem-containing enzyme, the mutant comprising [the] a substitution of an amino acid in [the] an active site by an amino acid with a less polar side-chain.

3. (Amended) Process according to claim 2 in which the enzyme is one in which amino acid 47 [and/] or 51 or 47 and 51 of $P450_{BM-3}$, or amino acid 96 of $P450_{cam}$, or the equivalent amino acid[(s)] in a said homologue, have been changed to an amino acid with a less polar side-chain

6. (Amended) [An enzyme] The enzyme as defined in claim 4 excluding mutants of $P450_{cam}$ which only have the mutations F87A-Y96G-F193A, F87A-Y96G-F193A- C334A, or T101M-T185F-V247M.

8. (Amended) A cell which expresses:

(i) a mutant haem-containing enzyme comprising [the] a substitution of an amino acid in [the] an active site by an amino acid with a less polar side-chain which in its naturally occurring form has an electron transfer reductase domain, or

(ii) (a) a mutant haem-containing enzyme comprising [the] a substitution of an amino acid in [the] an active site by an amino acid with a less polar side-chain,

(b) an electron transfer reductase, and

(c) an electron transfer redoxin; or

(iii) (a) (1) $P450_{cam}$, or a fragment thereof; or

(2) a naturally occurring homologue of $P450_{cam}$ or a fragment thereof; or

(3) a mutant $P450_{cam}$, or a mutant of a naturally occurring homologue of $P450_{cam}$ comprising [the] a substitution of an amino acid in [the] an active site by an amino acid with a less polar side-chain; or

(4) a $P450_{cam}$ which has at least 70% amino acid homology with (1), (2) or (3) and optionally in which amino acid 96 has been changed to an amino acid having a less polar side-chain; and

(b) an electron transfer reductase; and

(c) an electron transfer redoxin, or

(iv) (a) (1) $P450_{BM-3}$, or a fragment thereof; or

(2) a naturally occurring homologue of $P450_{BM-3}$ or a fragment thereof; or

(3) a mutant $P450_{BM-3}$, or a mutant of a naturally occurring homologue of $P450_{BM-3}$ comprising [the] a substitution of an amino acid in [the] an active site by an amino acid with a less polar side-chain

excluding an *E. Coli* DH5α cell in which the only mutants of $P450_{cam}$ which are expressed are amongst the following:

H_2N-$P450_{cam}$-TDGTSST-putidaredoxin reductase-TDGASSS-putidaredoxin-COOH,

H_2N-$P450_{cam}$–TDGTRPGPGPGPGPSST-putidaredoxin reductase-TDGASSS-putidaredoxin-COOH,

H_2N-$P450_{cam}$–TDGTRPGPGPGPGPGPGPSST-putidaredoxin reductase-TDGASSS putidaredoxin-COOH,

H_2N-450_{cam}–putidaredoxin reductase-TDGASSS-putidaredoxin-PLEL-$P450_{cam}$-COOH.

9. (Amended) [A] The cell according to claim 8 in which (a), (b) and (c) or (b) and (c) are expressed together in the same fusion protein.

10. (Amended) [A] The cell according to claim 8 in which:
(b) is putidaredoxin reductase or a fragment thereof; and/or
(c) is putidaredoxin or a fragment thereof.

11. (Amended) Process for oxidising a substrate which is an acyclic or cyclic terpene, or a cycloalkene, or a substituted derivative thereof[;] , and which process comprises oxidising said [compound] substrate with a mutant haem-containing enzyme, the mutant comprising [the] a substitution of a first amino acid in [the] an active site by an amino acid with a less polar side-chain, wherein the [compound] substrate is oxidised in a cell according to claim 8.

13. (Amended) Process for selecting a mutant of $P450_{cam}$ or $P450_{BM-3}$, or a homologue thereof, for its ability to oxidise a [particular] substrate, which process comprises screening a group of said mutants for their oxidation effect on the [particular] substrate.

14. (Amended) Process according to claim 13 in which the mutant is additionally selected for its ability to oxidise the [particular compound] substrate to [a] an [particular] oxidation product.

15. (Amended) Process [according to claim 13] for selecting a mutant of $P450_{cam}$ or $P450_{BM-3}$, or a homologue thereof, for its ability to oxidise a substrate, which process comprises screening a group of said mutants for their oxidation effect on the substrate in which the screening is carried out in a library made in a process according to claim 12.

16. (Amended) A process for producing a library of oxidation products comprising providing an acyclic or cyclic terpene, or a cycloalkene[;], or a substituted derivative thereof to a library made in a process according to claim 12 and allowing oxidation of the substrate.

17. (Amended) A method of treatment of a human or an animal comprising administering an oxidation product obtained by oxidising a substrate which is an acyclic or cyclic terpene, or a cycloalkene[;], or a substituted derivative thereof, and which process comprises oxidising said substrate with a mutant haem-containing enzyme, the mutant comprising [the] a substitution of an amino acid in [the] an active site by an amino acid with a less polar side-chain, wherein optionally the enzyme is one which has been selected in a process according to claim 13.

18. (Amended) A pharmaceutical composition comprising an oxidation product obtained by oxidising a substrate which is an acyclic or a cyclic terpene, or a cycloalkene[;], or a substituted derivative thereof, and which process comprises oxidising said [compound] substrate with a mutant haem-containing enzyme, the mutant comprising [the] a substitution of an amino acid in [the] an active site by an amino acid with a less polar side-chain, wherein optionally the enzyme is one which has been selected in a process according to claim 13 and a pharmaceutically acceptable carrier or diluent.